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Notice of Allowability	Application No.	Applicant(s)	
	10/056,343	BHATTACHARYA ET AL.	
	Examiner	Art Unit	
	Phallaka Kik	2825	

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to RCE, amendment and drawings filed on 3/15/2004, and the drawings received on 10/15/2003.
2. ☒ The allowed claim(s) is/are 1,2 and 4-24, wherein claim 3 has been cancelled and claims 4,8-11,5,23-24,6-22 have been renumbered as 3-23.
3. ☒ The drawings filed on 15 March 2004 and 15 October 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

DETAILED ACTION

1. This Office Action responds to Applicant's RCE, amendment and drawings filed on 3/15/2004, and the drawings received on 10/15/2003. Claims 1-2,4-24 are pending, wherein claim 3 has been cancelled, claims 1,5,22 have been amended, and claims 23-24 have been newly added. Claims 1-2,4-24 have been examined and are allowed, wherein claims 20 and 22 is subjected to the following Examiner's amendment.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/15/2004 has been entered.

EXAMINER'S AMENDMENT

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows to correct minor informalities in the claims and updating the status of referenced application in the specification:

In the claims:

As per **claim 20**, "claim 17" (line 1) has been replaced with --claim 19-- to provide for proper antecedent basis for "said design criteria" (lines 1-2).

As per **claim 22**, "pre-exiting" (line 11) has been replaced with --pre-existing-- for proper spelling.

In the specification:

--now U.S. Patent Application Publication No. 20020053063, -- has been inserted before "entitled" (page 2, line 7).

Drawings

4. The drawings were received on 3/15/2004 and 10/15/2003. These drawings are acceptable.

Allowable Subject Matter

5. **Claims 1-2,4-24** are allowed.

6. The following is an examiner's statement of reasons for allowance:

As per **claims 1-2,4-24**, the independent claims 1 and 22, from which the respective claims depend, recite the automated computer-implemented method and storage media including computer readable program instructions for an automated computer-implemented method, for reducing the number of distinct integrated circuit (IC) logic cells generated to implement an IC design, comprising the inventive steps/means for determining an implementation of said cell based on said received functional description and said received design constraint, which design constraint relates to a context-of-use for said cell in said IC design, wherein the distinct IC logic cells generated for implementing said IC design have a new functionality not present in

Art Unit: 2825

a pre-existing library used to implement said IC design and the number of distinct IC logic cells is reduced, as claimed. In particular, although **Bair et al.** (US Patent No. 5,898,595, especially col. 4, line 49 to col. 6, line 67) and **Chao et al.** (US Patent No. 5,031,111, especially col. 5, line 21 to col. 6, line 25) teach the generation of cells having new functionality not present in a pre-existing library used to implement the IC design, the generation of new cells are based on manually, user driven synthesis rather than automatic generation based on the functional description and context-of-use design constraint as claimed. Other prior arts made of record teach library development involving adding and characterization of the new cells into the existing cell library (see especially **Dutt et al.**, "Bridging high-level synthesis to RTL technology libraries", Proceedings of the 28th ACM/IEEE Design Automation Conference, Jun. 17, 1991, pp. 526-529, especially section 5; **Dutt**, "Legend: a language for generic component library description", IEEE Comput. Soc. Press, 1990 International Conference on Computer Languages, Mar. 12, 1990, pp. 198-207, especially section 3.1.2; **Asdjodi**, "ELL: Extendable Library Language", IEEE Comput. Soc. Press, Proceedings of the Twenty-Third Annual Hawaii International Conference on System Sciences, vol. 2, Jan. 2, 1990, pp. 257-266, especially section B). However, none of the prior arts made of record, alone or in combination, teach or suggest the inventive steps/means as claimed. Accordingly, the claimed invention is novel and unobvious over the prior arts made of record.

Conclusion

7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phallaka Kik whose telephone number is 571-272-1895. The examiner can normally be reached on Monday-Friday, 8:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any response to this action should be mailed to:

Commissioner for Patents

P. O. Box 1450

Alexandria, VA 22313-1450

or faxed to:

703-872-9318 (for Before-Final) and 703-872-9319 (for After-Final) for
formal communications intended for entry,

Or:


(571) 273-1895 (for informal or draft communications, please label
"PROPOSED" or "DRAFT" and let the examiner know prior to
faxing).

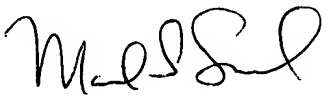
9. **Applicant should note that effective May 1, 2003, the United States Patent and Trademark Office has a new Commissioner for Patents address for transitioning to the new Office location in Alexandria, VA, wherein correspondence in patent-related matters to organizations reporting to the Commissioner for Patents must now be addressed to:**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

PK 
April 16, 2004


**MATTHEW SMITH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800**